Alberta

Demographic Spotlight

June 2011

FERTILITY IN ALBERTA

HIGHLIGHTS

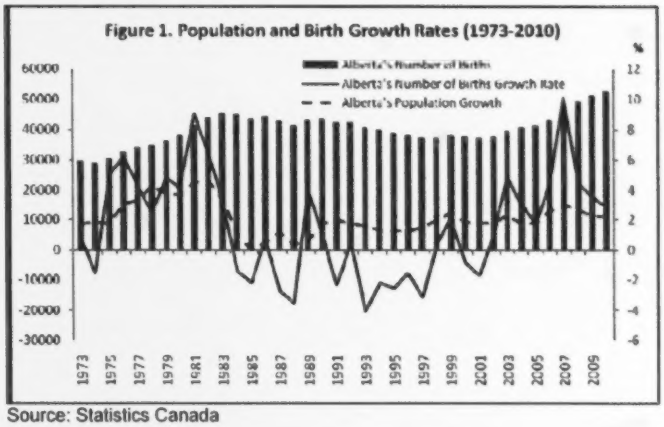
- Alberta has experienced a marked increase in the number of births in recent years, partially due to the growing population.
- Alberta has had the highest crude birth rates and total fertility rates among provinces.
- More women are postponing childbearing to later stages in their lives.
- Meanwhile, women are having more babies as indicated by the rising total fertility rates.
- Regionally, women living in Calgary and Edmonton tend to have babies later in their lives and have fewer children compared to women in the rest of Alberta.

TREND OF BIRTHS

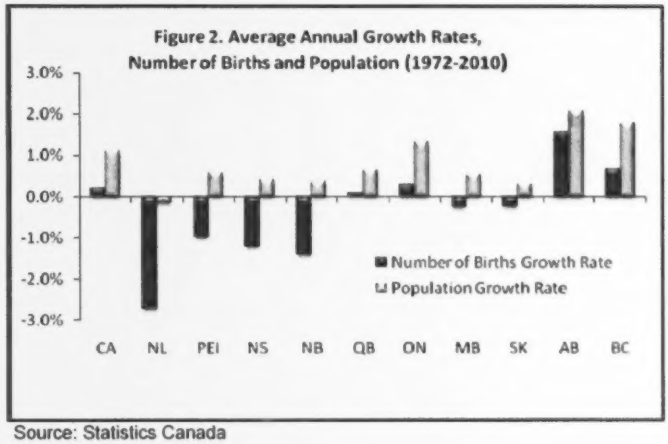
After a 20-year-long downward trend in the 1980s and 1990s, total number of births in Alberta reached an inflection point in the early 2000s and has been picking up since then (**Figure 1**). After surpassing the previous peak of 45,470 (1983) in 2007, births in Alberta rose to a record high of 52,937 in 2010.

The increase in the number of births can be partially explained by the expanding population in Alberta. Total births in the province increased more than 80% from 29,384 in 1972 to 52,937 in 2010, yielding an average annual growth rate of 1.6%. Meanwhile, Alberta's total population more than doubled during the same period to reach an average annual growth rate of 2.1%. However, population growth does not always translate into more births. For instance, despite the slowdown in the 1980s and 1990s, Alberta's population continued to grow, whereas the total number of births declined half of the time (**Figure 1**). Therefore, other factors, such as people's preference on when to have children and how many children to have, will also have a significant impact on the number of births in the province. These factors will be discussed in later sections of this spotlight.

At the national level, the total number of births grew at a much slower rate, 0.2% on average between 1972 and 2010, compared to Alberta's 1.6% (**Figure 2**). Only three other provinces had positive average growth rates during this period, which were British Columbia (0.7%), Ontario (0.3%) and Quebec (0.1%). The rest of the provinces saw their overall births numbers decline, led by the Maritime Provinces of Newfoundland and Labrador (-2.7%), New



Source: Statistics Canada



Source: Statistics Canada

Brunswick (-1.4%), Nova Scotia (-1.2%) and Prince Edward Island (-1.0%). All of the provinces saw their overall population growth outpace the birth growth rates.

CRUDE BIRTH RATE

The crude birth rate (CBR) measures the number of births per 1000 persons. In 2010, the crude birth rate for Alberta was 14.4, which means that there were 14.4 live births per 1,000 Albertans. The CBR in Alberta has been declining since the early 1980s. However, this trend reversed in 2003 and since then Alberta's CBR has been rising gradually.

Alberta has enjoyed the highest crude birth rates among provinces since 1979 except in 1995, when Manitoba took the lead by a small margin. This may be due to Alberta's younger

Prepared by Demography Unit.
For more information, please contact Sheena Francisco (780) 427-7391

age structure in its population. For instance, over the past 10 years, childbearing aged (15-49) female population accounted for 26.1% of Alberta's total population on average, the highest among provinces and higher than the national average of 25.1%. Over the same period, Alberta's CBR averaged 13.3, more than 20% higher than the national average of 10.9 (**Figure 3**). The second highest 10-year average CBR belonged to Saskatchewan (12.5), followed by Manitoba (12.4) and Ontario (10.8). The lowest rates have been observed in the Maritime Provinces.

Age-Specific Fertility Rates

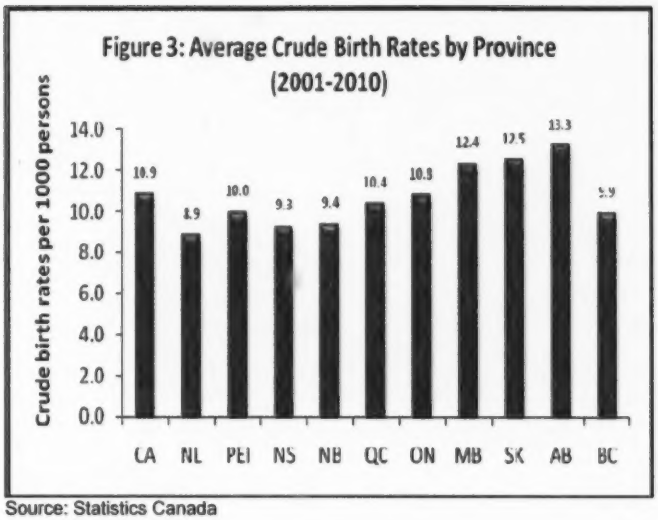
The age-specific fertility rate (ASFR) is the ratio of the number of live births given by a particular female age group to the total female population in that age group in a given year. Statistics show that women are delaying their childbearing years, which are indicated by the right-shifting age-specific fertility rate curve. **Figure 4** illustrates the ASFRs of Alberta women in 1997 and 2010. The graph shows that women aged 26 and less in 2010 had lower ASFRs compared to the women of the same age group in 1997, while women aged 27 years and older in 2010 had higher fertility rates compared to the group of the same age in 1997. Furthermore, teenage fertility (15-19 years old) has gone down by 30.9% from 27 live births per 1,000 women in 1997 to 19 in 2010, while ASFR for women aged 30-35 has risen by 37.3% from 86 births per 1000 in 1997 to 118 births per 1000 in 2010. The highest ASFR in 1997 was recorded at 28 years old (122 per 1,000 women) while it was 30 years old (140 per 1,000 women) in 2010. The highest level increase in age-specific fertility rate between 1997 and 2010 occurred at the age of 35.

A similar phenomenon has also been observed in other parts of the country. There are a few factors that may contribute to this change in childbearing behaviour. More educational and career opportunities for females, higher average education attainment and higher income level among women all give females the incentive to postpone childbearing to later stages of their lives.

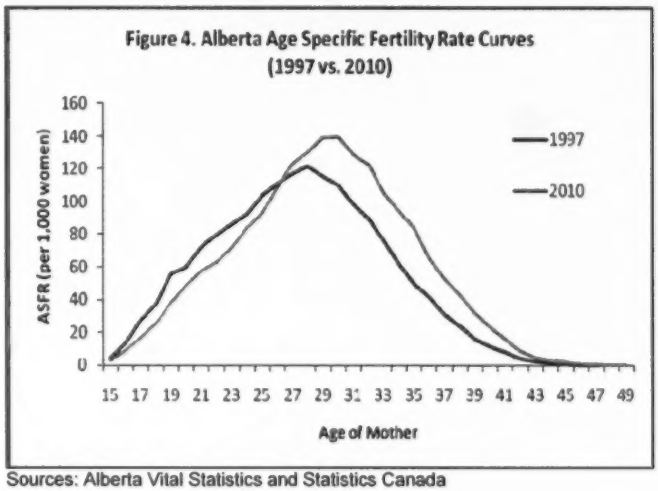
Total Fertility Rates

The total fertility rate (TFR) refers to the average number of children a woman would have if the current age-specific fertility rates prevailed over her reproductive period. To compute the TFR, we sum up all the age-specific fertility rates in a given year.

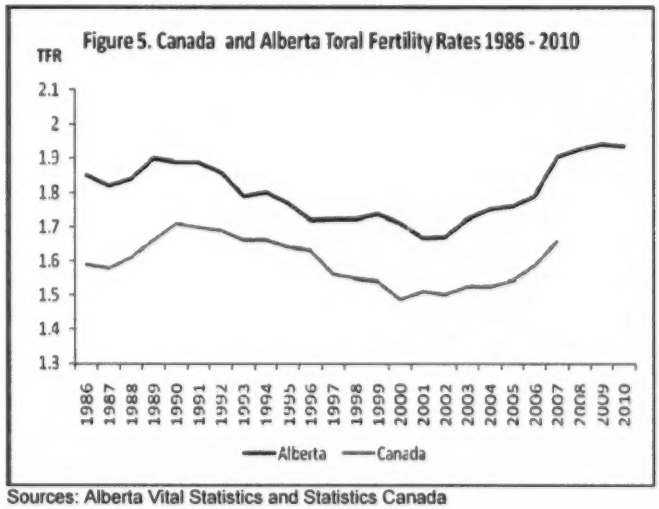
Alberta's TFR had been declining during the 1990's, which partly explains the declining number of births during that period. After hitting a low of 1.67 per childbearing woman in 2001, the province's TFR bounced back by 16% to 1.94 in 2010 (**Figure 5**). It implies that despite the postponement of childbearing as suggested by the shift in the ASFR curve, females in Alberta are still having more babies. Furthermore, Alberta's TFRs were 12% higher on average than the national TFRs between 1986 and 2007.



Source: Statistics Canada



Sources: Alberta Vital Statistics and Statistics Canada



Sources: Alberta Vital Statistics and Statistics Canada

Across provinces, the highest total fertility rates have been observed in the Prairie Provinces. **Figure 6** shows the average TFRs from 1986 to 2007 for all provinces. As indicated, Saskatchewan had the highest average TFR of 1.93, followed by Manitoba (1.87) and Alberta (1.78), all higher than the national average of 1.60. The lowest TFR was recorded in Newfoundland and Labrador (1.32). Although the Prairie Provinces had the highest TFRs during this period, Quebec experienced the fastest growth among provinices with an average growth rate of 0.96%. Manitoba ranked second (0.33%) and Alberta was third (0.14%).

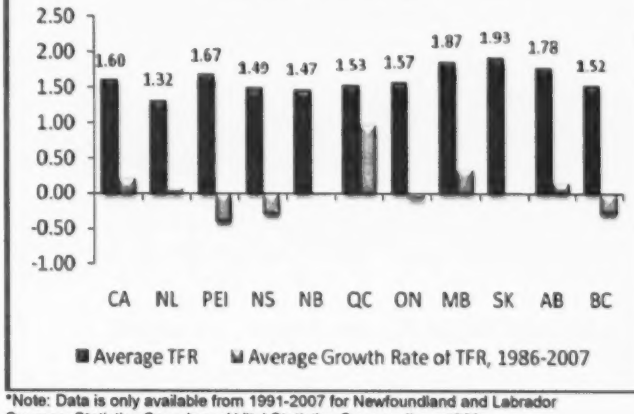
Another concept related to total fertility rate is the replacement level, which is the number of children that a woman needs to have in order to maintain the current level of population without migration. In developed countries, the replacement level is about 2.1. A total fertility rate lower than the replacement level of 2.1 suggests decling and aging population, whereas a higher-than-2.1 TFR suggests growing population. All of the provinces in Canada had a TFR below the replacement level between 2000 and 2007, which partially explains the aging population phenomenon in this country.

Regional Level

Alberta's crude birth rates, ASFR and TFR will be examined at the census division level. Of the 19 census divisions, CD17 (Slave Lake) had the highest 10 year average crude birth rate of 21.6 births per 1000 persons (**Figure 7**). This was mainly due to CD17's high fertility rates. CD10 (Camrose), CD4 (Hanna), CD13 (Whitecourt) and CD15 (Banff) all had a 10-year average crude birth rate below 12.0. This was partially because of the relatively old age structure in their populations. The two most populated census divisions, CD6 (Calgary) and CD11 (Edmonton), also had a low average crude birth rate over the past 10 years as a result of their low fertility rates.

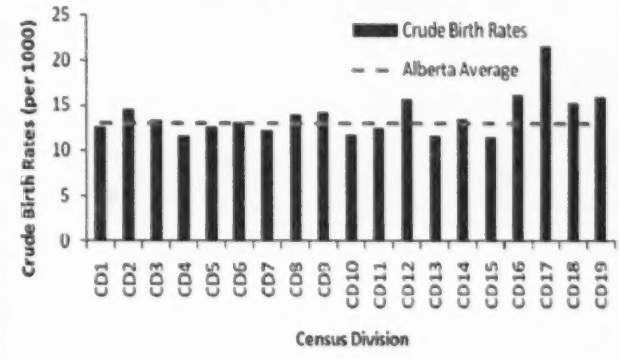
The ASFRs of the 19 CDs indicate that the fertility trends are quite different across Alberta. In order to analyze the differences, Calgary (CD6) and Edmonton (CD11) are grouped together and then compared to the rest of Alberta. **Figure 8** shows that young women living outside of Calgary and Edmonton tend to have significantly higher age specific fertility rates compared to their counterparts in these two cities. However, the rest of Alberta's ASFR curve drops below that of Calgary and Edmonton's slightly after the age of 31, indicating women in these two regions are more likely to postpone their pregnancy to later stages of their lives. Statistically, the median age of mother for the rest of Alberta was 27 in 2010 compared to 29 for CD6 and CD11. Furthermore, **Figure 8** also indicates that women in Calgary and Edmonton tend to have fewer babies overall compared to the rest of Alberta. The 10-year average TFR for Calgary and Edmonton was 1.68, almost 25% lower than the TFR of 2.09 for the rest of Alberta.

Figure 6. Average Total Fertility Rates by Province (1986-2007)



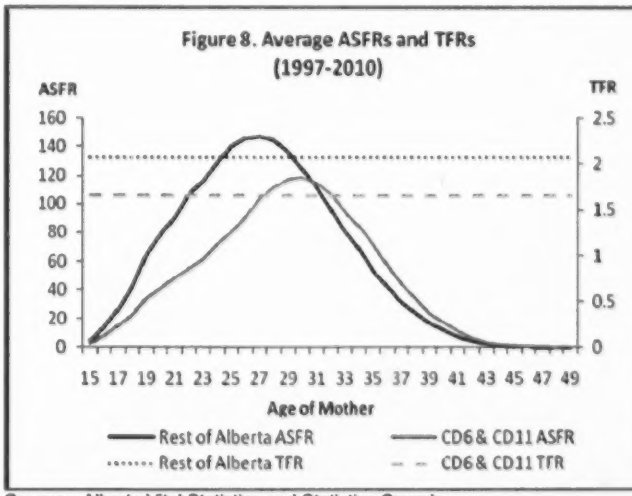
*Note: Data is only available from 1991-2007 for Newfoundland and Labrador
Sources: Statistics Canada and Vital Statistics Compendium, 1996

Figure 7. Crude Birth Rates by Census Division 10 year averate 2001-2010



Source: Statistics Canada

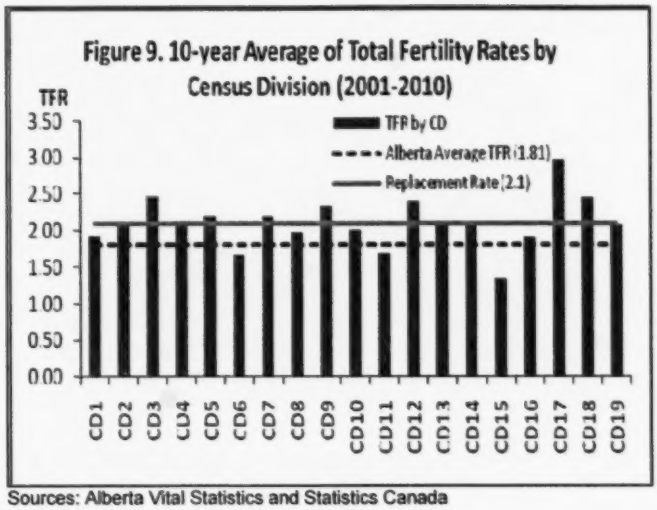
Figure 8. Average ASFRs and TFRs (1997-2010)



Sources: Alberta Vital Statistics and Statistics Canada

These different fertility patterns between the two groups can be partly explained by the fact that there are more educational and career opportunities in Calgary and Edmonton. These opportunities may encourage females to postpone pregnancy and limit their family size.

In **Figure 9**, the 10-year average TFRs of the 19 census divisions in Alberta are presented. Of the 19 census divisions, CD15 (Banff, 1.35), CD6 (Calgary, 1.67) and CD11 (Edmonton, 1.68), which composed about 72% of Alberta's childbearing age (15-49) female population in 2010, were below the provincial average of 1.81. Nine CDs were above the replacement level of 2.10 while seven were between the provincial average and the replacement level. Specifically, CD17 (Slave Lake) had the highest 10-year average TFR of 2.98 in the province, followed by CD3 (Pincher Creek, 2.47), CD18 (Grande Cache, 2.45) and CD12 (St. Paul, 2.41). The strong presence of the aboriginal people, who tend to have higher fertility rates and bigger family sizes, may be attributable to the overall high fertility rates in these CDs.[1] According to Census 2006, CD17 had the highest proportion (39.2%) of aboriginal population among all CDs, followed by CD12 (21.6%), CD3 (19.0%) and CD18 (17.5%); whereas the provincial average was about 5.8%.



Sources: Alberta Vital Statistics and Statistics Canada

[1] Statistics Canada, Canadian Demographics at a Glance, 2008